

REMARKS

Favorable reconsideration of this application, in light of the following discussion, is respectfully requested.

Claims 1-18 are currently pending. No claims have been amended herewith.

In the outstanding Office Action, Claims 1-5, 8-13, and 16-18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,288,809 to Touma et al. (hereinafter “the ‘809 patent”) in view of U.S. Patent No. 6,434,164 to Matsunaga et al. (hereinafter “the ‘164 patent”); Claims 6, 7, 14, and 15 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the ‘809 and ‘164 patents, further in view of U.S. Patent No. 5,828,737 to Sawyer (hereinafter “the ‘737 patent”); Claims 1-3, 6-8, 9-11, and 14-18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over European Patent Application EP 869,634 to Wright et al. (hereinafter “the ‘634 patent”) in view of International Patent Application WO 98/18235 to Caterisano (hereinafter “the ‘235 patent”).

Claim 1 is directed to a digital content downloading system using a network in which digital content, possessed by a digital content retailer communicatively coupled to the network, is downloaded to one of a plurality of customers through the network, comprising: (1) a plurality of subscriber lines each formed of an optical fiber and arranged between the consumers and the network, the network being managed by a network operator; (2) an optical line terminator, arranged on one side of the network, for terminating a subscriber line on the network side; (3) an optical network unit (ONU), arranged on a side of each consumer, for terminating a subscriber line on the consumer side; (4) a star coupler configured to connect the subscriber lines terminated by the optical network units to the subscriber line terminated by the optical line terminator; (5) a resource reservation server configured to reserve a particular bandwidth for the digital content in the subscriber lines in response to a request by a particular consumer; and (6) downward bandwidth managing means, arranged in the optical

line terminator, for controlling downloading of the digital content from the digital content retailer to the optical network unit of the particular consumer so that the digital content is transmitted through the subscriber lines and the star coupler at the particular bandwidth reserved by the resource reservation server.

Regarding the rejection of Claim 1 under 35 U.S.C. § 103, the Office Action asserts that the '809 patent discloses everything in Claim 1 with the exception of the resource reservation server and the downward bandwidth managing means, and relies on the '164 patent to remedy those deficiencies.

The '809 patent is directed to an optical subscriber network system that connects plural optical network units to an optical service unit using passive optical elements through an optical transmission line. Applicants note that the Office Action asserts that the optical service station disclosed by the '809 patent reads on the claimed optical line terminator. However, as admitted in the Office Action, the '809 patent fails to disclose the resource reservation server and the downward bandwidth managing means recited in Claim 1.

The '164 patent is directed to a multiple-access communication system in which a center station dynamically allocates upstream bandwidth to subscriber stations upon receiving reservation information from the subscriber station. The '164 patent discloses that bandwidth may be reserved for subscriber stations to send data to the central station. In the regard, Applicants note that the term "upstream" is consistently used by the '164 patent to indicate communication to (in the direction of) the center station 10, and that the term "downstream" refers to communication to the subscriber stations 30-32. Further, Figures 2, 7, and 11 show "upstream bandwidth allocating means" 10*i*, 11*i*, and 12*i*, respectively for managing bandwidth in communication to the center station 10. The '164 patent does not disclose any type of downstream bandwidth allocating means. Further, the system components having the term "downstream" in their name in Figures 2, 7, and 11 of the '164 patent refer merely to

means for the center station to *communicate* with the subscriber stations, not to controlling downstream bandwidth. See also Figures 3 and 8 of the '164 patent, which refer to the guaranteed upstream rate. The '164 patent does not refer to "a guaranteed downstream rate."

Thus, Applicants respectfully submit that the '164 patent fails to disclose downward bandwidth managing means, arranged in the optical line terminator, for controlling the downloading of the digital content from the digital content retailer to the optical network unit of the particular consumer, so that the digital content is transmitted through the subscriber lines and the star coupler at the particular bandwidth reserved by the resource reservation server, as recited in Claim 1. The '164 patent fails to disclose that a downward path management means is arranged in an optical line terminator for controlling downloading of data. Further, the '164 patent fails to disclose that bandwidth is reserved for the downloading of the digital content from the digital content retailer to an optical network unit of a particular consumer. Rather, the '164 patent merely discloses the reservation of bandwidth for sending data from a subscriber station to the center station.

In this regard, Applicants note that the Office Action includes a response to the arguments presented in the Amendment filed February 9, 2005.¹ In particular, item 48 on page 14 states that "it is submitted that these arguments were addressed in specific details in the supplemental office action sent on 11/09/2004, in which the applicant did not comment or challenge the Examiner's reasoning in the response filed 02/09/2005." However, Applicants respectfully submit that Applicant did comment on the Examiner's reasoning regarding the downward bandwidth management means in the Amendment dated February 9, 2005. In particular, Applicants note that the Examiner directly quotes from those comments.

Regarding item 49, the Examiner refers to Applicants specification to state that "downward bandwidth managing means controls the transmission of the digital content of a

¹ See pages 14-18 of the outstanding Office Action.

downward signal...and upward bandwidth managing means control[s] the information of an upward signal transmitted in the upstream direction. Thus, bandwidth managing means controls the transmission of information in a downward and upward direction.”² However, Applicants note that the Examiner does not provide a reference to Applicants specification regarding the suggested meaning of “upward bandwidth managing means.” In this regard, Applicants note that Claim 9 recites an upward bandwidth managing means, arranged in the optical line terminator, for receiving the bandwidth reservation from the resource reservation server. Further, Claim 9 recites an upward transmission control means, arranged in the optical network unit of a particular content retailer, for controlling downloading of the digital content from the optical network of the particular content retailer to the consumer....” Further, Applicants note that none of the claims recite the “bandwidth managing means,” as asserted by the Office Action. Further, Applicants respectively submit that Claim 9 does not recite “upward bandwidth managing means [for controlling]... the information of an upward signal transmitted in the upstream direction,” as stated in item 49. Rather, Claim 9 recites an upward transmission control means for controlling downloading of digital content from an optical network unit.

Regarding item 50 on page 15 of the Office Action, the Examiner provides an analysis of the internal data flow of the functional units of the center station 10 shown in Figure 2 of the ‘164 patent. As discussed above, three of the units shown in Figure 2 use the word “downstream,” i.e., the downstream data transmission means 10k, the downstream frame assembly means 10d, and the downstream signal receiving means 10b. However, Applicants respectfully submit that these units are configured to package and send information to the various subscriber stations 30-32. As discussed above, none of the units is related to allocating downstream bandwidth.

² See page 15 of the outstanding Office Action.

Regarding item 51, the Examiner asserts that, because there are bidirectional data flows among the functional units within the center station 10 shown in Figure 2 of the '164 patent, "it should be obvious that the '164 patent discloses bandwidth managing means [that] controls the transmission of information both in downstream and upstream [directions]."³ However, Applicants respectfully submit that the directions of the arrows shown in Figure 2 relates only to the internal structure of the center station 10, and provides no evidence that the '164 patent discloses downward bandwidth managing means, as recited in Claim 1. Rather, the '164 patent merely discloses upstream bandwidth allocating means. As discussed above and in the Amendment filed February 9, 2005, the '164 patent does not discuss any type of downstream bandwidth allocating means. As shown in Figure 2, the '164 patent merely discloses upstream bandwidth allocating means 10i.

Regarding items 52 and 53, the Examiner states that "the optical line terminator as described by the applicants' specification is arranged in an office of a network operator...."⁴ However, Applicants note that the Examiner is referring to a passage in the Background of the Invention section of Applicants' specification. Further, Applicants note that the claims do not recite the word "office." Moreover, Applicants respectfully submit that whether an "office" is equivalent to a "center station" is immaterial and does not change the fact that the '164 patent does not disclose a downward bandwidth managing means, as recited in Claim 1.

Regarding item 55, Applicants note that Claim 9 recites "upward transmission control means, arranged in the optical network of a particular content retailer, for controlling downloading of the digital content from the optical network of the particular content retailer to the consumer so that the digital content is transmitted through the subscriber lines and the start coupler at the particular bandwidth according to the bandwidth reservation received

³ See page 16 of the outstanding Office Action.

⁴ *Id.*

from the upward bandwidth managing means.” Thus, despite the name “upward transmission control means,” Claim 9 is directed to controlling the downloading of digital content from an optical network unit of a particular content retailer to a consumer.

Moreover, Applicants respectfully submit that the combined teachings of the ‘809 and ‘164 patents would require that the ‘809 optical service unit be combined with or be a part of the ‘164 center station 10. However, it is unclear to Applicants which elements in such a combined system would correspond to the claimed digital content provider and which would correspond to the optical network units associated with the consumers. Moreover, as discussed above, the proposed combined system would not have downward bandwidth managing means for controlling downloading of digital content (at a reserved bandwidth) from a digital content provider to an ONU of a particular consumer, as recited in Claim 1.

Thus, no matter how the teachings of the ‘809 and ‘164 patents are combined, the combination does not teach or suggest the downward bandwidth management means recited in amended Claim 1. Accordingly, Applicants respectfully submit that a *prima facie* case of obviousness has not been established and that the rejection of Claim 1 (and dependent Claims 2-5 and 8) should be withdrawn.

Claim 9 recites limitations analogous to the limitations recited in Claim 1. In particular, Applicants note that Claim 9 requires upward transmission control means, arranged in an ONU of a particular content retailer, for controlling downloading of digital content (at a reserved bandwidth) from the ONU of the particular content retailer to a consumer. Neither the ‘809 nor the ‘164 patent discloses an upward transmission control means arranged in a ONU of a content retailer for controlling downloading of digital content from the retailer to a consumer. Accordingly, for the reasons stated above for the patentability of Claim 1, Applicants respectfully submit that a *prima facie* case of

obviousness has not been established and that the rejection of Claim 9 (and dependent Claims 10-13 and 16) should be withdrawn.

Regarding the rejection of dependent Claims 6, 7, 14, and 15 under 35 U.S.C. § 103, Applicants respectfully submit that the '737 patent fails to remedy the deficiencies of the '809 and '164 patents, as discussed above. In particular, the '737 patent fails to disclose the downward bandwidth management means recited in independent Claims 1 and 9.

Accordingly, Applicants respectfully submit that a *prima facie* case of obviousness has not been established and that the rejection of dependent Claims 6, 7, 14, and 15 should be withdrawn.

Regarding the rejection of Claim 1 under 35 U.S.C. § 103, the Office Action asserts that the '634 patent discloses everything in Claim 1 with the exception of the resource reservation server and the downward bandwidth managing means, that relies on the '235 patent to remedy those deficiencies.

The '634 patent is directed to a system for wavelength-division multiplexing in passive optical networks. However, as admitted in the Office Action, the '634 patent fails to disclose the resource reservation server and the downward bandwidth managing means recited in Claim 1.

The '235 patent is directed to a method for managing a flexible communications network allowing telecommunications customers to set up an arbitrary bandwidth connection upon demand. The '235 patent discloses a telecommunications system in which a customer can establish exclusive use of an end-to-end transmission channel at a requested time and bandwidth. However, Applicants respectfully submit that the '235 patent fails to disclose downward bandwidth managing means, arranged in an optical line terminator, for controlling downloading of digital content from a digital content retailer to an optical network unit of a particular consumer so that the digital content is transmitted through the subscriber lines and

the star coupler at the particular bandwidth reserved by the resource reservation, as recited in Claim 1. Further, Applicants respectfully submit that since the '235 patent discloses an end-to-end transmission channel for which a user has exclusive use is established, the '235 patent has no need for a downward bandwidth management means arranged in an optical line terminator, for controlling the downloading of the digital content to an optical network unit of a particular consumer at a particular bandwidth, as recited in Claim 1.

Thus, no matter how the teachings of the '634 and '235 patents are combined the combination does not teach or suggest the downward bandwidth management means recited in Claim 1. Accordingly, Applicants respectfully submits that a *prima facie* case of obviousness has not been established and that the rejection of Claim 1 (and dependent Claims 2, 3, and 6-8) should be withdrawn.

In this regard, Applicants note that the Examiner asserts that "one cannot show non-obviousness by attacking references individually where the rejections are based on combinations of references." However, Applicants note that the response filed February 9, 2005, as well as the present response, addresses the rejections of the claims under 35 U.S.C. § 103 as being unpatentable over the '164 and '235 patents, in the following manner. First, it is asserted that the outstanding Office Action admits that the '634 patent fails to disclose the resource reservation server and the downward bandwidth managing means recited in Claim 1. Next, it is asserted that the '235 patent also fails to disclose downward bandwidth managing means arranged in an optical line terminator, as recited in Claim 1. Next, Applicants state that "no matter how the teachings of the '634 and '235 patents are combined, the combination does not teach or suggest the downward bandwidth managing means recited in Claim 1." Accordingly, while Applicants state that the references individually do not disclosed the downward bandwidth managing means, Applicants also state that the combined teachings of the '634 and '235 patents also fails to disclose that limitation.

Claim 9 recites limitations analogous to the limitations recited in Claim 1.

Accordingly, for the reasons stated above for the patentability of Claim 1, Applicants respectfully submit that a *prima facie* case of obviousness has not been established and that the rejection of Claim 9 (and dependent Claims 10, 11 and 14) should be withdrawn.

Thus, it is respectfully submitted that independent Claims 1 and 9 (and all associated dependent claims) patentably define over any proper combination of the '809, '164, '737, '634, and '235 patents.

Consequently, in light of the above discussion, the outstanding grounds for rejection are believed to have been overcome. The present application is believed to be in condition for formal allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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